

REMARKS

The Examiner is thanked for the due consideration given the application.

Upon entry of this amendment, claims 1, 2, 4-15 and 17-21 are pending in the application. Claim 3 is canceled by this amendment and its subject matter is incorporated into claim 1, and the amendments to claim 1 (and claim 17) find additional support in, e.g., Figure 1 of the application. Claim 13 has been amended to not depend upon a canceled claim.

No new matter is believed to be added to the application by this amendment.

Entry of this amendment under 37 CFR §1.116 is respectfully requested because it places the application in condition for allowance. Alternately, entry is requested as the cancellation of a claim reduces issues for appeal.

Rejections Based on SCHAD

Claims 1, 4, 6, 7 and 9-15 have been rejected under 35 USC §102(b) as being anticipated by SCHAD (U.S. Patent 5,769,021). Claims 5, 8 and 17-21 have been rejected under 35 USC §103(a) as being unpatentable over SCHAD in view of PAVON et al. (U.S. Publication 2002/0017229). These rejections are respectfully traversed.

The present invention pertains to a retractable nose assembly for an amphibious vehicle that is illustrated, by way of

example, in Figure 1 of the application, which is reproduced below.

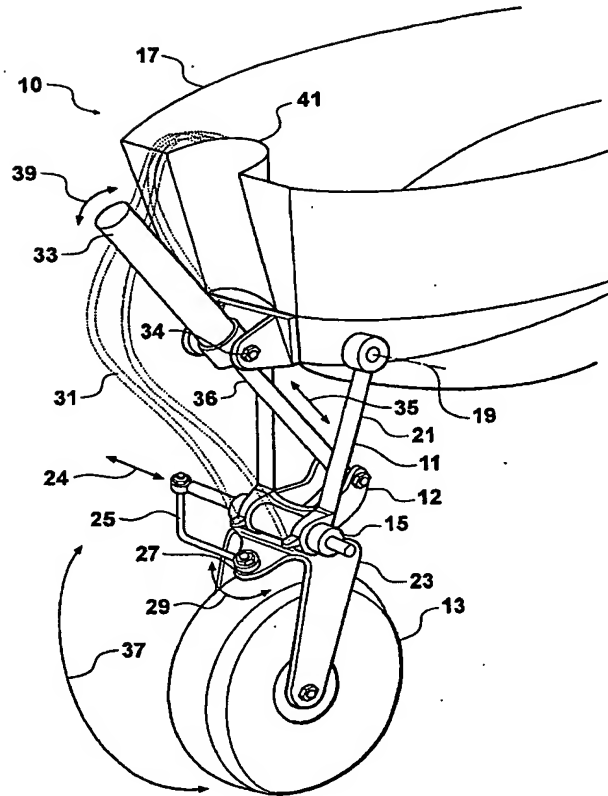


Figure 1

In the present invention, a nose leg assembly includes an adapter fitting. The leg and actuator are both connected to the fitting to produce a compact assembly that can be fitted to the hull of an amphibious vehicle as an assembly. In addition, the actuator is pivotally connected to the fitting at its rod end which allows it to follow the leg to a greater extent, making a large arc of travel of the leg possible. The advantages of the assembly, which includes these two features, can be summarized as follows:

A. The assembly can be fitted to the hull of a vehicle without the need for significant modification or local strengthening of attachment points. The reaction loads between the actuator and the leg can be resisted by the fitting rather than transferring these loads into the hull.

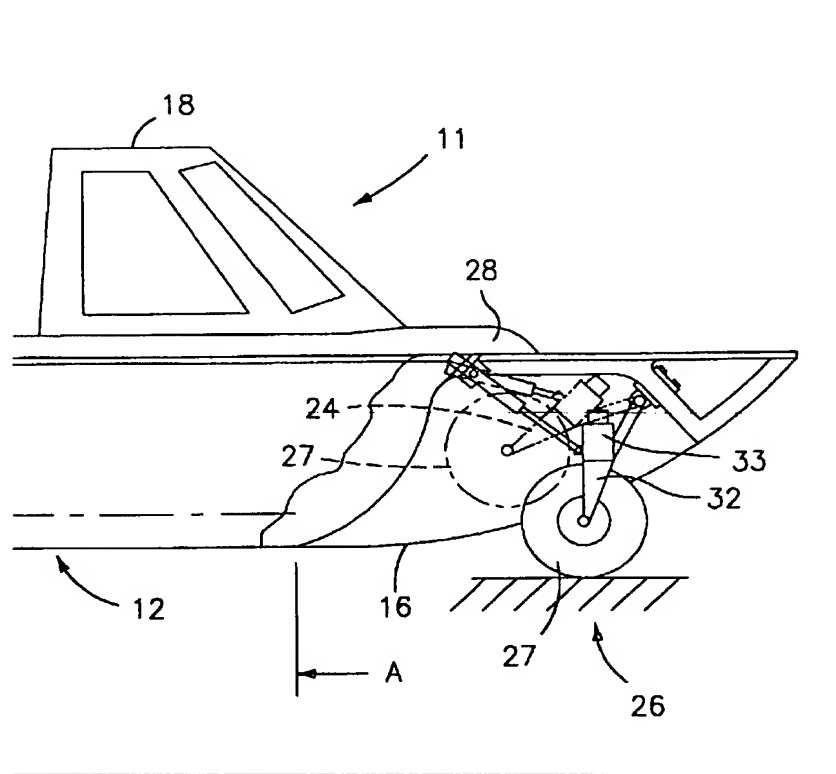
B. The assembly provides a configuration that can move the leg through a wide range of movement, i.e. greater than 120 degrees (see claim 5), without the need for a very long or a very powerful actuator since the actuator can pivot about its mounting location to maintain an effective crank angle relative to the movement of the leg throughout the majority of the range of movement of the leg.

C. The wide range of movement provided allows the leg assembly to be fitted to the exterior of the bow of a vehicle, and the wheel can be moved in one direction to a location that is useful for supporting the vehicle on the ground, and the wheel can be moved to a position well above the waterline of the vehicle for operations on water. The leg assembly allows stowage of the wheel without the need to provide a separate wheel well, and without the need to provide movable doors or fairings through which the wheel must pass.

Instant claim 1 of the present invention recites: "the actuator is movable about its pivotal connection in a manner ensuring that a force exerted on the leg by the actuator in a direction that is tangential to the arc of travel of the leg

remains substantially optimal during a greater portion of the arc of travel," and "the retractable leg assembly is a nose leg assembly located outside a hull of the amphibious vehicle without moving through an overall streamline or watertight skin of the hull."

SCHAD pertains to an amphibious vehicle that includes a retractable leg and a balloon tire, as is illustrated in Figure 1, a portion of which is reproduced below.



SCHAD fails to teach the use of an adapter fitting to form a nose leg assembly. SCHAD also fails to teach a nose mounted wheel assembly that is mounted outside the hull.

The wheel assembly of SCHAD is mounted within the hull and not outside of it or, more accurately, the wheel assembly of SCHAD is located within the streamline part of the hull.

In contrast, the present invention has movement of the nose assembly from extension to retraction (and vice versa) being external to the hull streamline and external to the skin portion. See claim 1 and the specification at page 3, lines 4-8. The second to last paragraph of page 3 of the specification also discusses: "Preferably, the linear actuator is positioned external to the substantially water-tight structure of the amphibious vehicle." See also instant claim 1.

SCHAD rather teaches a nose leg assembly that is connected to the hull of the amphibious vehicle at two distinct locations. The SCHAD leg assembly requires a purposely built, or a significantly redesigned and strengthened, bow area of the vehicle, while the present invention can be used on a conventional boat hull that has been modified to a much lesser extent. This is reflected in claim 3 of the present invention, which has now been incorporated into claim 1.

In addition to the significantly reduced requirements for bow redesign and strengthening, the present invention provides a leg assembly that is able to pivot the nose leg through a significantly greater range of movement. The leg assembly of SCHAD clearly only needs to move through an arc of about 45 degrees. By contrast, the nose leg of the present

invention is able to move through an arc of over 120 degrees (see claim 5). The extended range of movement is at least partly made possible by the cylinder of the nose leg actuator being pivotally connected to the adapter fitting at or adjacent its rod end. This allows the actuator to pivot to a greater extent as the leg pivots, allowing it to maintain good mechanical advantage over the movement of the leg.

The additional range of movement that is possible with the nose leg assembly of the present invention provides a leg that can move a wheel from a "down" or extended position below the hull of the vehicle, to a significantly higher "up" or retracted position that can be near the top of the bow. This is also significant in terms of amphibious vehicles since it allows the use of a hull that is only slightly modified from common boat hulls. There is thus no requirement to provide a wheel well, making the bow structure simpler, allowing improved hydrodynamics, and eliminating any need for the nose wheel to occupy valuable bow space.

The Official Action asserts that the claimed invention includes functional language that is inherently met by SCHAD. However, any functional language in the claimed invention serves to precisely define present structural attributes of interrelated component parts of the claimed assembly. *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976). See also *MPEP* 2173.05(g).

Even if one assumes *arguendo* that some attributes of the present invention were inherent in SCHAD, this purported inherency is no bar to patentability.

Accidental results not intended and not appreciated do not constitute anticipation. *Eibel Processing Co. v. Minnesota and Ontario Paper Co.*, 261 US 45 (1923); *Mycogen Plant Science, Inc. v. Monsanto Co.*, 243 F.3d 1316, 1336, 5 USPQ2d 1030, 1053 (2001). Further, the Federal Circuit stated in *In re Robertson*, that "to establish inherency, extrinsic evidence must make clear that the missing descriptive matter was necessarily present in the thing described in the reference, and would be so recognized by persons with ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949 (Fed. Cir. 1999).

In this case, the Official Action has failed to produce the necessary extrinsic evidence that any of the functionally claimed elements is inherent in SCHAD.

SCHAD accordingly fails to teach or suggest each and every element of claim 1 of the present invention. SCHAD thus fails to anticipate claim 1 of the present invention. Claims depending upon claim 1 are patentable for at least the above reasons.

The Official Action acknowledges that SCHAD fails to disclose movement through 120 degrees and a stop. The Official Action turns to PAVON et al. for these teachings.

However, one of ordinary skill would fail to produce a claimed embodiment of the present invention (including independent claim 17, at least for some of the reasons set forth above) from a knowledge of SCHAD and PAVON et al.

Additionally, the wheel assemblies of PAVON et al. are mounted in recesses formed in the sides of the hull, as can be seen in Figure 2 of the reference, reproduced below.

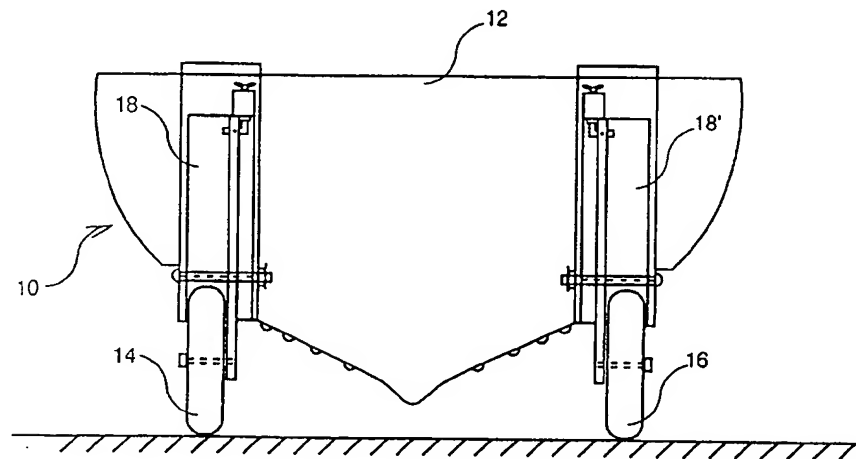


FIG. 2

This technology clearly fails to pertain to nose leg assembly, such as is set forth in independent claims 1 and 17 of the present invention.

Further, the Official Action asserts that the Abstract of PAVON et al. teaches 120 degrees and a stop. However, there is no teaching or suggestion in the Abstract of PAVON et al. of

120 degrees arc. Although extended and retracted positions are indicated in Figures 4 and 5 of PAVON et al., there is no indication of the degrees of arc or that the drawing figures are drawn to scale so that the degrees of arc can be measured.

A *prima facie* case of unpatentability has thus not been made from SCHAD and PAVON et al.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statement filed March 27, 2006 and for making an initialed PTO-1449 Form of record in the application.

Prior art cited but not utilized is believed to be non-pertinent to the instant claims.

It is believed that the rejections have been overcome, obviated or rendered moot and that no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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